ELECTRONIC INNOVATIONS IN ACTION

TUBES

—PRODUCT INFORMATION—

Dissimilar Double Triode

6GF7-A

FOR TV VERTICAL-DEFLECTION OSCILLATOR AND AMPLIFIER APPLICATIONS

- COLOR TV TYPE
- T-9 ENVELOPE
- DISSIMILAR DOUBLE TRIODE

The 6GF7-A is a dissimilar double triode designed for use as a combined vertical-deflection oscillator and amplifier in television receivers. Section one, a high-mu triode, is intended for service as an oscillator; section two, a low-mu, high-perveance triode, for service as an amplifier.

The 6GF7-A utilizes a T-9 bulb and features a 9-pin glass button base with a 0.687-inch circle.

GENERAL

ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

Heater Voltage, AC or DC★ .... 6.3±0.6 Volts

Heater Current● .... 0.985 Amperes

Direct Interelectrode Capacitances, approximate♦

	Section 1	Section 2	
Grid to Plate: (g to p)	4.6	9.0	pf
Input: g to (h+k)	2.4	6.5	pf
Output: p to (h+k)	0.26	1.4	pf

MECHANICAL

Operating Position - Any

Envelope - T-9, Glass

Base - E9-89, Button 9-Pin

Outline Drawing - EIA 9-108

Maximum Diameter	1.188	Inches
Minimum Diameter	1.062	Inches
Maximum Over-all Length	2.630	Inches
Maximum Seated Height	2.250	Inches
Minimum Seated Height	2.000	Inches

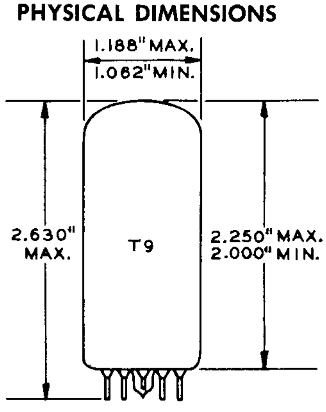
MAXIMUM RATINGS

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

PHYSICAL DIMENSIONS

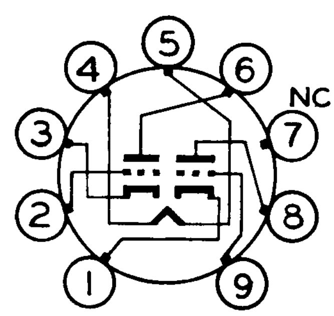


EIA 9-108

TERMINAL CONNECTIONS

Pin 1 - Cathode (Section 1)
Pin 2 - Grid (Section 2)
Pin 3 - Cathode (Section 2)
Pin 4 - Heater
Pin 5 - Heater
Pin 6 - Plate (Section 2)
Pin 7 - No Connection
Pin 8 - Plate (Section 1)
Pin 9 - Grid (Section 1)

BASING DIAGRAM



EIA 9QD

MAXIMUM RATINGS (Cont'd)

DESIGN-MAXIMUM VALUES

	Vertical Oscillator Service▲ (Section 1)	Vertical Deflection Amplifier▲ (Section 2)	
DC Plate Voltage	330	330	Volts
Peak Positive Pulse Plate Voltage	---	1500⊕	Volts
Peak Negative Grid Voltage	400	250	Volts
Plate Dissipation	1.5	11□	Watts
DC Cathode Current	22	50	Milliamperes
Peak Cathode Current	77	175	Milliamperes
Heater-Cathode Voltage			
Heater Positive with Respect to Cathode			
DC Component	100	100	Volts
Total DC and Peak	200	200	Volts
Heater Negative with Respect to Cathode			
Total DC and Peak	200	200	Volts
Grid Circuit Resistance			
With Cathode Bias	2.2	2.2	Megohms

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

	Section 1 (Oscillator)	Section 2 (Amplifier)		
Plate Voltage	250	60	150	Volts
Grid Voltage	-3.0	0§	-20	Volts
Amplification Factor	64	---	5.4	
Plate Resistance, approximate	40000	---	750	Ohms
Transconductance	1600	---	7200	Micromhos
Plate Current	1.4	95	50	Milliamperes
Plate Current, approximate				
Ec = -28 Volts	---	---	10	Milliamperes
Grid Voltage, approximate				
Ib = 10 Microamperes	-5.5	---	---	Volts
Grid Voltage, approximate				
Ib = 100 Microamperes	---	---	-45	Volts

NOTES

★ The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.

● Heater current of a bogey tube at Ef = 6.3 volts.

♦ Without external shield.

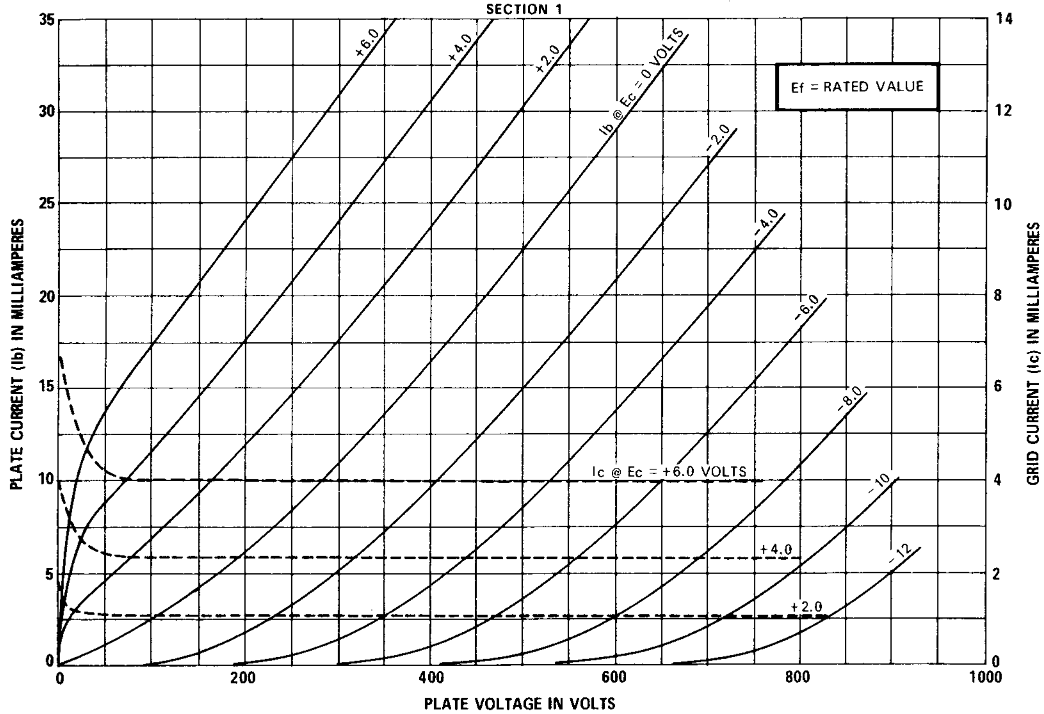
▲ For operation in a 525-line, 30-frame television system as described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission. The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.

⊕ Value given is to be considered as an Absolute-Maximum Rating. In this case, the combined effect of supply voltage variation, manufacturing variation, including components in the equipment, and adjustment of equipment controls should not cause the rated value to be exceeded.

□ In stages operating with grid-leak bias, an adequate cathode-bias resistor or other suitable means is required to protect the tube in the absence of excitation.

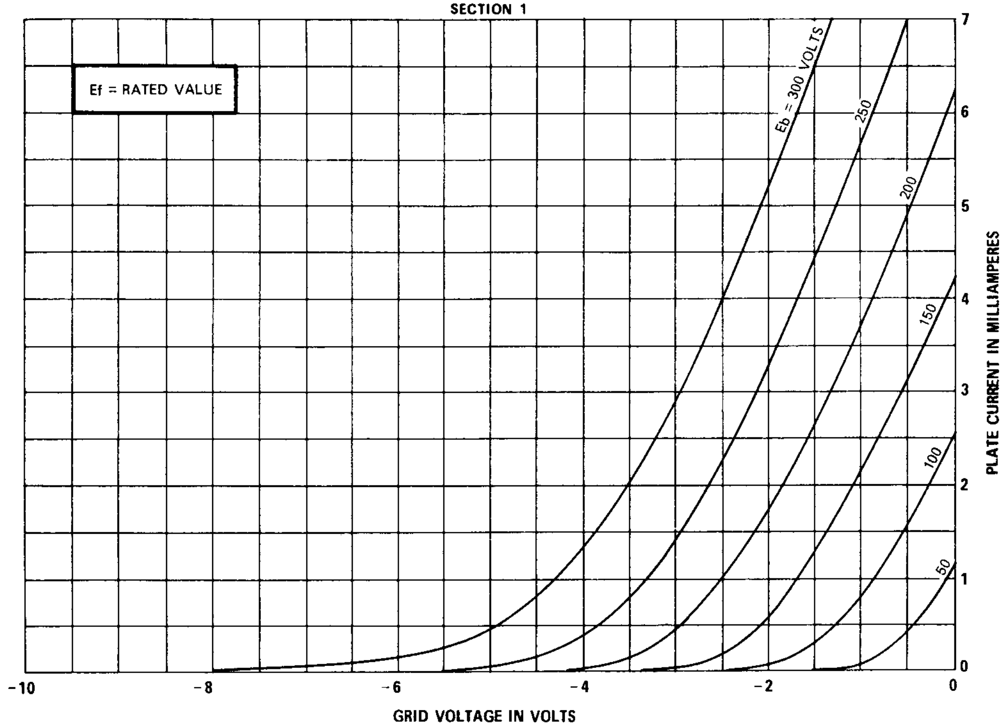
§ Applied for short interval (two seconds maximum) so as not to damage tube.

AVERAGE PLATE CHARACTERISTICS
SECTION 1



K-55611-TD222-1A

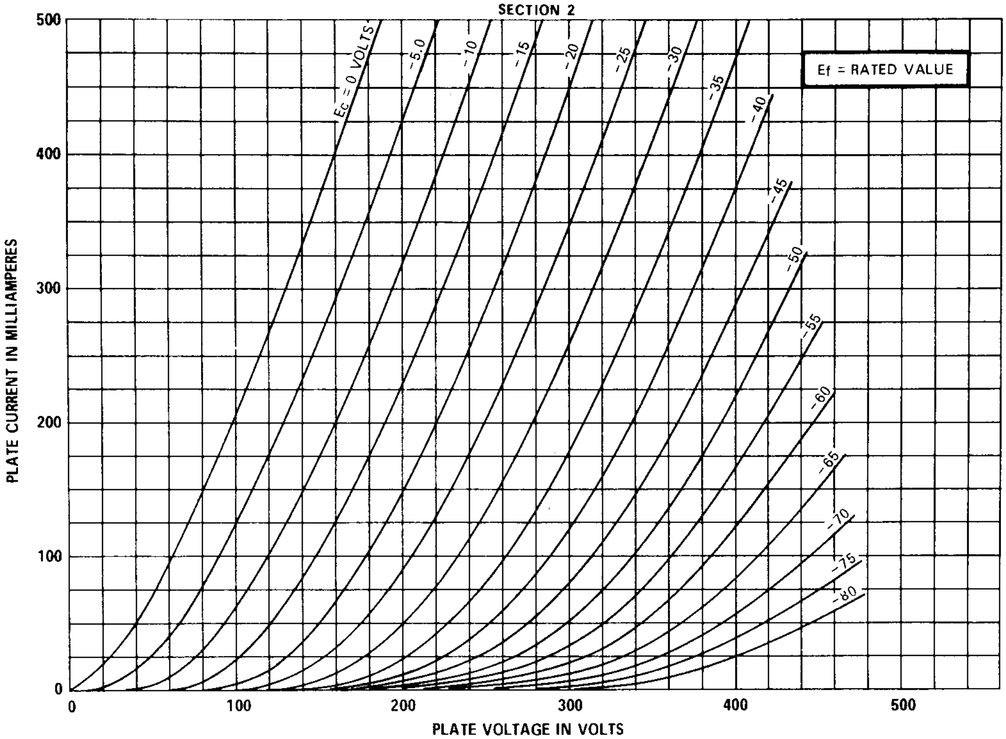
AVERAGE TRANSFER CHARACTERISTICS
SECTION 1



K-55611-TD 222-2A

AVERAGE PLATE CHARACTERISTICS

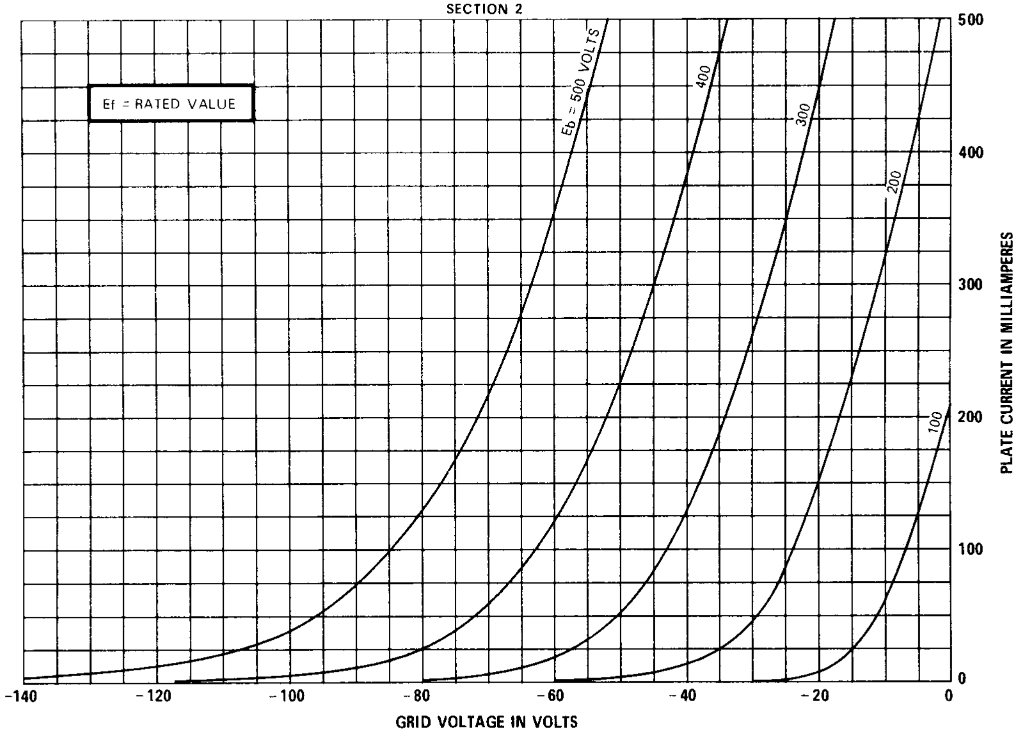
SECTION 2



K-55611-TD222-3A

AVERAGE TRANSFER CHARACTERISTICS

SECTION 2



K-55611-TD222-4A

TUBE PRODUCTS DEPARTMENT
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GENERAL ELECTRIC